



Document ID	Pages	1	2	3	4	5	U	S	C	P	kind Codes	Source
92 US 6187164 B1	1-2	E	E	E	E	E	P	P	P	P	USPA1	USPA1
93 US 6179950 B1	1-2	P	P	P	P	P	P	P	P	P	USPA1	USPA1
94 US 6179952 B1	2-6	P	P	P	P	P	P	P	P	P	USPA1	USPA1
95 US 6174425 B1	10	P	P	P	P	P	P	P	P	P	USPA1	USPA1
96 US 6171952 B1	9	P	P	P	P	P	P	P	P	P	USPA1	USPA1
98 US 6162394 A	8	P	P	P	P	P	P	P	P	P	USPA1	USPA1

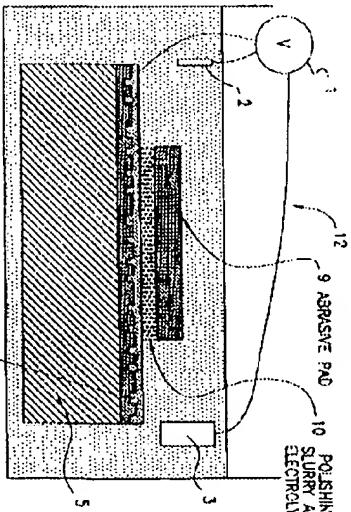
(12) United States Patent		(10) Patent No.: US 6,171,467 B1	(11) Date of Patent: Jan. 9, 2001
(13) Inventor: <b>Timothy P. Wehs et al.</b>			
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(15) Notice: Under 35 U.S.C. 154(e), the term of this patent shall be extended for 0 days.			
(16) Related U.S. Application Data			
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(20) Field of Search 205/224 M, 205/123, 155/345 LP, 216/35, 216/562, 653, 93, 123, 155/345 LP, 216/563, 65, 89, 438/692, 693, 431/285, 286, 287.			
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(23) Primary Examiner—Kathryn George, Assistant Examiner—William T. Lester, Attorney, Agent, or Firm—Dietrich Sapiro Morris & Ohannessian LLP			
(24) ABSTRACT			
An apparatus and method is disclosed, both of which use electrochemistry to selectively grow and remove hard oxide coatings on metals and specific dielectric layers on semiconductors and semiconductor insulator to predict and control the rate of surface abrasion during planarization of the surface of such materials.			
(25) 6 Claims, 5 Drawing Sheets			

U.S. PATENT DOCUMENTS

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11 METALLIZATION  
12 POLISHING (CAP OF METALLIZATION)  
9 ABRASIVE PAD  
10 POLISHING SLURRY AND ELECTROLYTE  
3



OXIDE OR SURFACE PROPERTY  
CONTROLED ELECTROCHEMICALLY

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